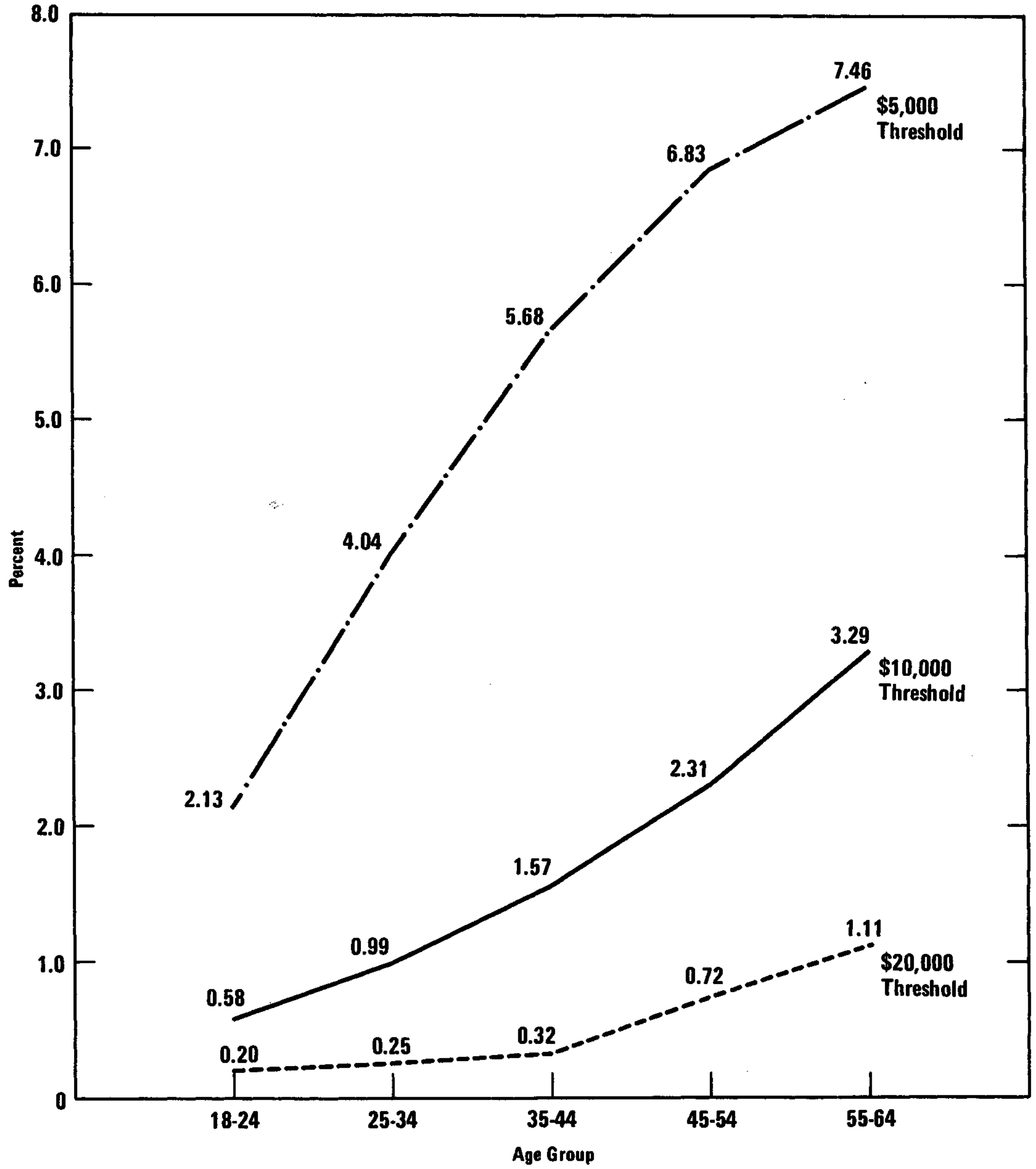
Figure E-3.

## Percent of Families Exceeding Catastrophic Thresholds in 1978 by Age and Level of Catastrophic Threshold (In 1982 dollars)



## Sex

Gender has important effects on expenses claimed under self-only contracts, affecting both average expenses and the incidence of catastrophic illness. Women have higher average expenses than men and are more likely to have moderately high expenses, but men and women are equally likely to have very high expenses (see Table E-2). This pattern, however, varies with age. At younger ages, males have substantially lower average expenses than women and are markedly less likely to exceed the lower ($3,000 and $5,000) thresholds. Their expenses rise more rapidly with increasing age than those of women, however, and by the 55-64 age group, the average expense of males slightly exceeds that of females. By the 55-64 age group, males also show a tendency toward a higher incidence of high-cost illness.

TABLE E-2. PROPORTION OF SELF-ONLY CONTRACTS EXCEEDING THRESHOLDS OF ANNUAL EXPENSE, BY SEX

| Level of Expense | Male | Female |
|---|---|---|
| $ 298[a] | 13.1 | 21.6 |
| $ 502[b] | 9.2 | 16.8 |
| $ 1,000 | 5.4 | 11.2 |
| $ 3,000 | 2.3 | 4.5 |
| $ 5,000 | 1.1 | 2.2 |
| $10,000 | 0.5 | 0.6 |
| $20,000 | 0.1 | 0.1 |

a. Male average

b. Female average

The data used here do not clarify the reason for this pattern, but it may stem in part from two factors: maternity expenses, and the higher mortality of males. Maternity would routinely result in annual expenses over $3,000, and annual expenses over $5,000 are not rare. This would contribute to both the higher average expense and the higher incidence of moderately high-cost illness among women in the age groups below 45.[3] The higher mortality rate of males may push the expenses of males above those in females in the oldest age group.

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3. Maternity claims are presumably underrepresented in the self-only contracts shown in Table E-2. Unfortunately, the data do not permit a comparable analysis of differences among all individuals in the data, because in the case of family contracts, records are available only for individuals who have filed claims. Comparable analyses were conducted, however, including all individuals who had filed claims. These analyses had the advantage of including all maternity claims, but they had the weakness of masking sex differences in the frequency with which people filed no claims at all. The results were largely comparable to those reported above.

## APPENDIX F. THE EFFECTS OF USING INDIVIDUAL RATHER THAN FAMILY THRESHOLDS

The role of individuals in high-cost illness is perhaps most directly relevant to policy in deciding how to structure health insurance to provide protection against the financial burden of high-cost illness. Although most recent insurance proposals have focused on the expenses of entire families, a plan could also be based on the expenses of individuals.

In order to assess the different effects of these two aproaches, the same four thresholds used throughout this paper were applied to all individuals in the sample. That is, each individual's expenses were tabulated separately, regardless of family membership. This mirrors a catastrophic insurance plan in which eligibility would be based on the expenses of individuals, and only the expenses of the individual exceeding the threshold (rather than the expenses of the individual's whole family) would be included in calculating the amount of expenses considered "catastrophic."

The effect of substituting individual for family thresholds would be to reduce both the number of catastrophic cases and total catastrophic expenses, but the catastrophic expense per case would generally increase (see Table F-1). The decrease in the number of catastrophic cases would be sizable, ranging from 12 to 19 percent. Since high-cost illness is often largely a result of the expenses of a single family member, the other family members excluded from consideration by the use of an individual threshold would often have relatively low expenses. Accordingly, much of the decrease in the number of catastrophic cases caused by using an individual threshold would be due to the exclusion of families that would exceed the family threshold by a relatively small amount, and those that would remain under an individual threshold would tend to be the higher-cost cases. Thus, using all but the lowest of the four thresholds, the catastrophic costs per case would actually increase 3 to 5 percent if an individual threshold was used, even though the expenses of other family members would not be considered. Since costs per case would increase, total "catastrophic costs"--that is, total expenses above the threshold--would decrease slightly less than the number of catastrophic cases--about 12 to 17 percent.

TABLE F-1. EFFECTS OF SUBSTITUTING INDIVIDUAL FOR FAMILY THRESHOLDS, BY LEVEL OF THRESHOLD (In percent change)

| | $3,000 | $5,000 | $10,000 | $20,000 |
|---|---|---|---|---|
| Cases Exceeding Threshold | -12.3 | -18.8 | -17.6 | -14.8 |
| Average Expenses in Excess of Threshold (per case) | -4.4 | +2.8 | +4.7 | +3.7 |
| Total Expenses in Excess of Threshold (all cases) | -16.1 | -16.5 | -13.8 | -11.6 |

Even though substituting an individual threshold for a family threshold would have only moderate effects on aggregate catastrophic costs, it would have a very large effect on the financial burden experienced by some high-cost families. The additional burden would be greatest for families with no single family member over the threshold (who would receive no protection using an individual threshold) and other families with a relatively small proportion of expenses attributable to one family member. The decline in benefits would depend on several factors--the specific provisions of the plan; the family's other insurance, if any; the family's total expenses; and so on--but could be several times as large as the aggregate change in catastrophic costs.[1]

---

1. For example, consider a catastrophic insurance plan that limited cost-sharing to $3,000 per year. For simplicity, consider a family that has the minimum insurance--100 percent cost-sharing up to $3,000 and 0 percent cost sharing thereafter. Assume that the family had $7,223 in expenses (the average for families exceeding a $3,000 family threshold) and that 75 percent of their expenses were attributable to one family member. (Twenty-three percent of families with expenses above $3,000 have that degree--or less--of concentration of expenses in one individual.) If a family threshold was applied, their cost sharing would be $3,000. If an individual threshold was applied, their cost sharing would increase 60 percent, to $4,806. (They would pay $3,000 in cost sharing for the one high-cost individual, whose expenses would be 0.75 x $7,223 = $5,417. The expenses attributable to other family mmebers would be 0.25 x $7,223 = $1,806. Since this is below $3,000, no additional family members could reach the cost-sharing limit. Total cost sharing would therefore be $3,000 + $1,806 = $4,806.) More extreme cases would also occur.

## APPENDIX G. HIGH-COST ILLNESSES THAT OVERLAP THE END OF A CALENDAR YEAR: THE EFFECTS OF ALTERNATIVE INSURANCE PROVISIONS

This paper, paralleling many catastrophic insurance proposals, defined high-cost illness by whether expenses incurred within a calendar year exceed a specific threshold. Some high-cost illnesses, however, fail to meet this criterion or are more burdensome than this criterion would indicate. This happens when the relevant expenses are incurred over a period that extends beyond the ends of a calendar year.

One case in which this occurs is when expenses are unusually high but are not concentrated within a single calendar year. For example, a family may have expenses that are atypically high for two or more years but are just below the threshold in any one year. Such an illness would not be classified as catastrophic, even though a considerably less expensive illness extending over a shorter period of time could be. A second case is illnesses that produce expenses in excess of a threshold within a 12-month period but that occur partly in one calendar year and partly in the next. A third case is illnesses that produce expenses above the threshold in one calendar year and unusually high expenses that nonetheless fail to exceed the threshold in the subsequent year. Because of the financial drain of the medical expenses in the first year, subsequent expenses that are high but below the threshold could be as burdensome as the higher expenses in the first year, but they would not be classified as catastrophic using a calendar-year criterion.

This Appendix analyzes several aspects of high-cost illnesses that do not neatly fit into the boundaries of calendar years. The major finding is that a sizable proportion of high-cost illnesses extend into more than one calendar year, and focusing entirely on expenses within calendar years would lessen costs transferred to others, but at the price of excluding some high-cost families from benefits under a catastrophic insurance plan and reducing the benefits that some families would receive.

### EXPENSES EXTENDING OVER PARTS OF TWO YEARS

Some high-cost illnesses are largely or entirely confined to a 12-month period but will nonetheless not push the affected family over the catastrophic threshold in any calendar year, because the period of illness straddles the end of the year. To assess the extensiveness of this problem, this section considers the additional families that would exceed a catastrophic threshold if they were free to use any consecutive 12 months to accumulate expenses--that is, if they were freed from the constraint of using calendar years to tabulate expenses. To analyze this, expenses over two calendar years are considered, and high-cost families are divided into three groups: those who exceed a given catastrophic threshold in only one of the two years, those who exceed it in both calendar years, and those who fail to exceed it in either year but do exceed it over a twelve-month period that is partly within each year.

Depending on the threshold, between 80 and 83 percent of high-cost families exceed the threshold in only one of the two calendar years (see Table G-1). An additional 5 to 15 percent exceed the same threshold in both of the two years. (These latter are, on average, a particularly high-cost group. Given any threshold, the average expenses within either calendar year of this group are considerably higher than the average expenses of the families that exceed that threshold only in that year.) Accordingly, the great majority of families who exceed a catastrophic threshold within a 12-month period (from 88 to 95 percent, depending on the threshold) will exceed the threshold even under a calendar-year constraint.

From 6 to 12 percent of families exceeding the threshold within a 12-month period fail, however, to exceed the threshold under a calendar-year constraint. In general, the higher the threshold, the higher the proportion of high-cost families who are excluded by this constraint.[1]

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1. These numbers are an assessment of the extent of the problem but are not an estimate of the impact of removing the calendar-year constraint from a catastrophic insurance plan. That impact would depend both on the specific provisions of the plan and on the decisions of high-cost families. Moreover, the impact in the first year would probably differ from the impact in subsequent years, since some families would lose eligibility in one calendar year because of having applied some of that year's expenses toward the previous year's total.

TABLE G-1. FAMILIES EXCEEDING CATASTROPHIC THRESHOLDS WITHIN TWELVE CONSECUTIVE MONTHS OVER A TWO-YEAR PERIOD, WITH AND WITHOUT CALENDAR-YEAR CONSTRAINT, BY THRESHOLD

| | \$3,000 | \$5,000 | \$10,0000 | \$20,000 |
|---|---|---|---|---|
| Total (thousands) | 9,212 | 4,930 | 1,574 | 453 |
| Exceed in one calendar year only (percent) | 80 | 80 | 81 | 83 |
| Exceed in both calendar years (percent) | 15 | 10 | 8 | 5 |
| Exceed in neither calendar year (percent) | 6 | 10 | 11 | 12 |

NOTE: Components may not sum to 100 percent because of rounding.

In addition to limiting the number of families exceeding the threshold, a calendar-year constraint affects the average expenses of high-cost families in two ways. Some of the families that exceed the threshold even with the calendar-year constraint could increase the amount of their expenses that would be considered above the threshold if they were free to choose whatever 12 consecutive months maximized their expenses. Accordingly, under a catastrophic insurance plan that reimbursed all expenses above a threshold, removing a calendar-year constraint would substantially increase some families' reimbursement. On the other hand, those families who would exceed the threshold only in the absence of a calendar-year constraint would have, on average, somewhat lower expenses than the families that exceed the threshold with the constraint. This is because the higher a family's expenses relative to a given threshold, the less likely it is that the loss of some high-cost months because of a calendar-year restriction would push it below the threshold. Given these two factors, the net effect on average reimbursable expenses of removing a calendar-year constraint from a catastrophic insurance plan would largely depend on the specific plan involved. It is likely, however, that average reimbursements would not change greatly, although more families would be reimbursed.

## EXPENSES CONTINUING AFTER THE END OF A HIGH-COST YEAR: CARRY-OVER PROVISIONS

Some families that exceed a catastrophic threshold in one calendar year continue to have expenses that are unusually high, but below the level of the threshold, in the subsequent year. The prevalence of this problem can be assessed by examining the effect of "carry-over provisions." These are provisions that would apply a more lenient criterion than the catastrophic threshold in determining which families remain "high-cost" the year after exceeding the threshold. In a catastrophic insurance plan, such a provision would allow some additional families to "carry over" their eligibility for benefits into the subsequent year.

To assess the prevalence of high-cost families whose subsequent expenses are high but below the threshold, two steps are required. First, the number of high-cost families who would continue to be classified as high-cost under various carry-over provisions is ascertained. Second, this number is compared to the number of high-cost families who would remain high-cost the subsequent year even without a carry-over provision (that is, by exceeding the catastrophic threshold again in the subsequent year).

One simple type of carry-over provision, called an "annual carry-over" here, would set a second-year threshold that is lower than the normal threshold. For example, families that exceed a $10,000 threshold in one year could be required only to exceed half that amount in the following year. The threshold would be set at a lower level the second year to avoid having families bear the burden of a catastrophic deductible two years in succession.

A second type of carry-over provision, called a "quarterly carry-over" here, would require that the family maintain the lower level of expense for only a portion of the following year--for example, one calendar quarter. In this case, the level of expenses required by the carry-over would be divided among the four calendar quarters of the subsequent year. A provision of this sort was incorporated into the Long-Ribicoff catastrophic bills (most recently, S. 350, 96th Congress).[2]

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2. The carry-over levels discussed here all correspond to either one-half or three-fourths the annual rate of expenditures reflected in the relevant catastrophic threshold. In the case of annual carry-overs, this means simply imposing a second-
(Continued)

Annual Carry-Over Provisions

In general, imposing a threshold in the second year that is one-half the normal threshold would increase the proportion of high-cost families that would continue to receive benefits in the absence of any carry-over provision by two-thirds to three-fourths (Table G-2). The exception is the lowest threshold ($3,000). In that instance, the effect of the carry-over would be somewhat smaller. The more stringent carry-over level (three-fourths of the threshold amount) would increase the proportion continuing to receive benefits less than half as much as much as would the more lenient carry-over.

The proportion of high-cost families that would be afforded continued protection by an annual carry-over provision would decline markedly as higher thresholds were used. (This parallels the fact that the higher the threshold used, the smaller is the proportion of high-cost families that exceed the threshold again in the subsequent year.) For example, 42 percent of families exceeding a threshold of $3,000 would exceed a carry-over level of one-half the threshold ($1,500) the next year (see Table G-2). Only half that proportion (21 percent) of families exceeding a threshold of $20,000 would exceed the corresponding carry-over level ($10,000). If the carry-over was set at the more stringent level of three-fourths of the threshold, fewer high-cost families would exceed the carry-over, but the proportion would decline similarly as the threshold was raised.

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2. (Continued)
year threshold that is either one-half or three-fourths as great as the generally applied threshold. In the case of quarterly thresholds, these amounts are further divided between the four quarters. Accordingly, a quarterly carry-over set at one-half the annual rate of expenditures reflected in the general threshold requires expenses equal to one-eighth the general threshold in each quarter.

In the quarterly carry-over provisions analyzed here, expenses must exceed the carry-over level in each calendar quarter with no interruption if the family is to maintain catastrophic status. Only those families that exceed the quarterly carry-over level in the first quarter are potentially eligible in the second; only those who exceed it in both the first and second quarters are potentially eligible in the third; and so on. Accordingly, the proportion of high-cost families exceeding the carry-over level necessarily drops from each quarter to the next.

TABLE G-2. HIGH-COST FAMILIES RECEIVING BENEFITS IN SUBSEQUENT YEAR, WITH AND WITHOUT ANNUAL CARRY-OVER PROVISION, BY THRESHOLD (In percent of high-cost families)

| | $3,000 | $5,000 | $10,000 | $20,000 |
|---|---|---|---|---|
| Without Carry-over[a] | 27 | 20 | 18 | 12 |
| With Annual Carry-over | | | | |
| Three-fourths of threshold | 33 | 27 | 23 | 16 |
| One-half of threshold | 42 | 35 | 30 | 21 |

a. High-cost families exceeding same threshold in subsequent year.

Application of an annual carry-over provision would also increase the benefits received by all high-cost families that exceed the carry-over level. In some cases, the increase in benefits would be dramatic. For example, with a $20,000 threshold, a family with expenses of $25,000 in the subsequent year would have $5,000 in expenses above the threshold--and therefore be eligible for reimbursement--that year. In contrast, under the more lenient of the carry-over provisions, their expenses eligible for reimbursement would triple, to $15,000.

The aggregate effect of a carry-over provision on benefits and costs, however, would be less striking than this example, although still large. For example, of the 724,000 families exceeding a $10,000 threshold in one year, about 127,000 (18 percent) would exceed $10,000 in the subsequent year as well (see Table G-3). About 165,000 (30 percent more) would exceed the relatively strict carry-over requirement of $7,500, and about 220,000 (73 percent more) would exceed the more lenient carry-over level of $5,000. Total expenses eligible for reimbursement--that is, total expenses above the required level, whether the threshold or the carry-over level--would be increased by somewhat smaller percentages if a carry-over provision was applied. Total expenses above the required level would increase 25 percent with the stricter carry-over and 57 percent with the more lenient.

TABLE G-3. EFFECTS OF DIFFERENT ANNUAL CARRY-OVER PROVISIONS ON BENEFITS AND COSTS, USING A $10,000 THRESHOLD (In 1982 dollars)

| | Carry-Over Provision | | |
|---|---|---|---|
| | None[a] | Strict[b] | Lenient[c] |
| Families Remaining Above Required Level[d] (thousands) | 127 | 165 | 220 |
| Percent change | --- | +30 | +73 |
| Average Expenses Above Required Level | 11,599 | 11,152 | 10,537 |
| Percent change | --- | -4 | -9 |
| Total Expenses Above Required Level (millions)[e] | 1,473 | 1,840 | 2,318 |
| Percent change | --- | +25 | +57 |

a. Families must exceed $10,000 threshold in second year.

b. Families must exceed $7,500 carry-over in second year.

c. Families must exceed $5,000 carry-over level in second year.

d. Threshold or carry-over level.

e. These numbers are for comparative purposes and do not directly correspond to the cost of similar catastrophic insurance plans. Those costs would depend on many factors, such as the segments of the population included in the plan.

One factor underlying this pattern is that average family expenses above the required level would actually decline slightly if a carry-over provision was applied. This decline would occur with any of the thresholds except for $20,000. The application of a carry-over provision extends protection to a substantial number of families with expenses only slightly above the carry-over. In calculating average reimbursable expenses, this roughly offsets the dramatic increase in reimbursable expenses for many families that exceed the required level even without a carry-over provision.

## Quarterly Carry-Over Provisions

The effects of the quarterly carry-over provisions would be quite similar regardless of the threshold or the carry-over level used. A sizable percentage of high-cost families exceed the carry-over level in the first calendar quarter, but this percentage drops very rapidly over the remainder of the year.[3] Even in the first quarter, however, the proportion of families exceeding the quarterly carry-over level would often be lower than the proportion exceeding the corresponding annual carry-over level.

The higher the threshold used, the lower the proportion of families that would exceed the carry-over level, but the variation from threshold to threshold would be quite small (see Table G-4). Similarly, applying the more stringent rather than the more lenient carry-over level would necessarily lower the proportion of high-cost families that would exceed the carry-over level, but it would not alter the pattern of a rapid decline in the proportion exceeding the carry-over level during the second through fourth calendar quarters. That the pattern of decline would be similar in all cases is shown graphically in Figure G-1. The top two lines, which are almost identical to each other, represent the proportion of high-cost families exceeding the lower carry-over level for $5,000 and $10,000 thresholds. The lower two lines, which parallel the top two but are slightly lower, represent the more stringent carry-over for the same thresholds. Accordingly, any one carry-over level can serve as an example.

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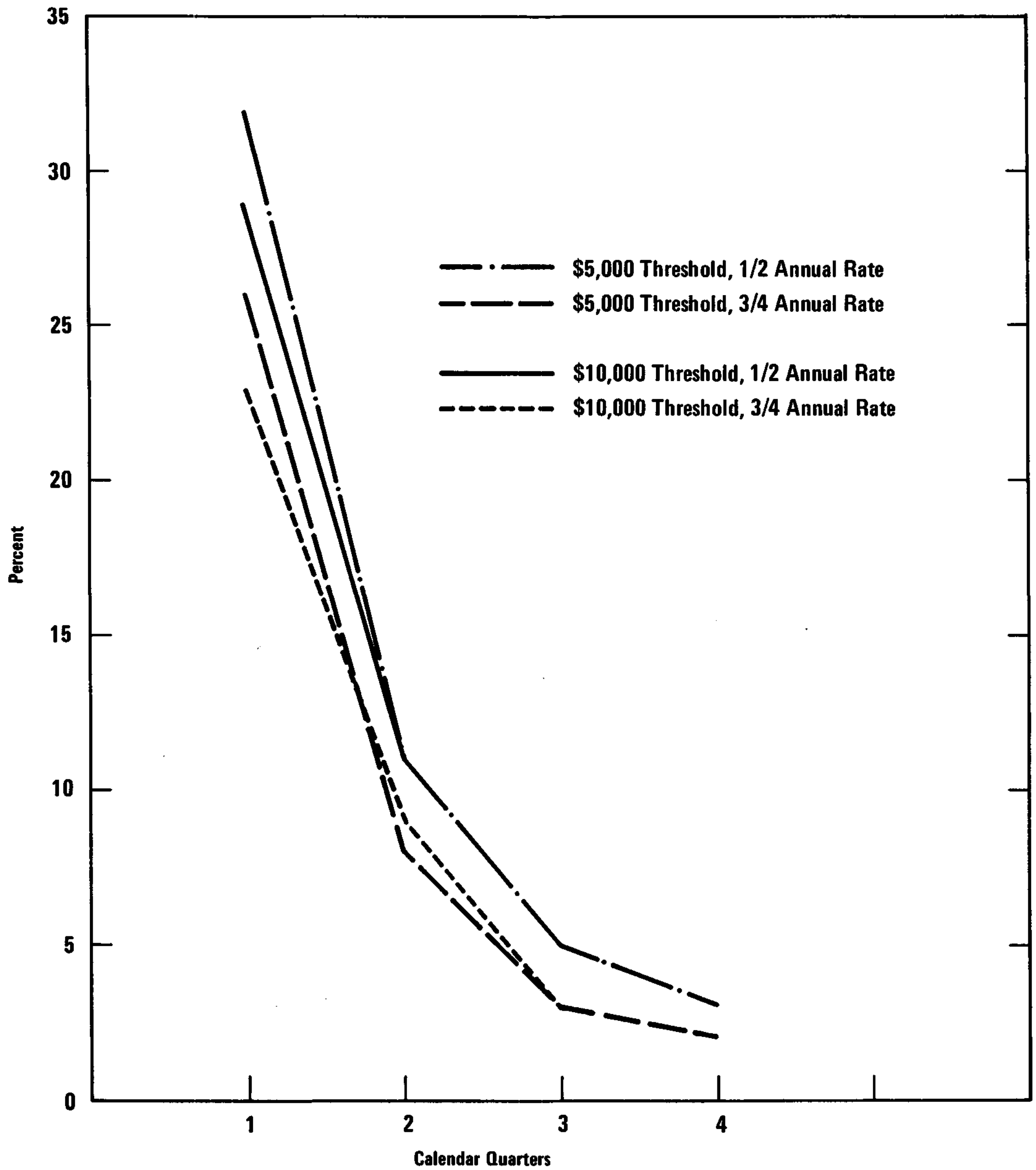
3. As already noted, families would have to exceed the carry-over in each calendar quarter without interruption to remain eligible.

TABLE G-4. PERCENT OF HIGH-COST FAMILIES EXCEEDING QUARTERLY CARRY-OVER LEVELS IN EACH QUARTER OF THE SUBSEQUENT YEAR, BY THRESHOLD AND CARRY-OVER LEVEL (Using 1982 dollars)

| | Calendar Quarter | | | |
|---|---|---|---|---|
| | 1 | 2 | 3 | 4 |
| $3,000 Threshold | | | | |
| 1/2 annual rate ($375 per quarter) | 33 | 12 | 6 | 3 |
| 3/4 annual rate ($563 per quarter) | 28 | 9 | 4 | 2 |
| $5,000 Threshold | | | | |
| 1/2 annual rate ($625 per quarter) | 32 | 11 | 5 | 3 |
| 3/4 annual rate ($938 per quarter) | 26 | 8 | 3 | 2 |
| $10,000 Threshold | | | | |
| 1/2 annual rate ($1,250 per quarter) | 29 | 11 | 5 | 3 |
| 3/4 annual rate ($1,875 per quarter) | 23 | 9 | 3 | 2 |
| $20,000 Threshold | | | | |
| 1/2 annual rate ($2,500 per quarter) | 25 | 8 | 3 | 3 |
| 3/4 annual rate ($3,750 per quarter) | 18 | 6 | 1 | 1 |

Figure G-1.

Percent of High-Cost Families Exceeding Quarterly Carryover Levels During Subsequent Year, by Threshold and Carryover Level



If a \$10,000 threshold was in use and the more stringent carry-over level was applied,[4] 23 percent of high-cost families would exceed the carry-over level in the first quarter of the subsequent year (see Table G-4). During the second quarter, however, only 9 percent would exceed the carry-over level, and by the fourth quarter, the percentage would drop to 2 percent.

## Quarterly Carry-Overs Compared to Annual Carry-Overs

Annual carry-over provisions would offer more protection to high-cost families than would the corresponding quarterly carry-overs, in two respects. First, when thresholds are low, annual carry-overs would generally extend protection to a higher proportion of high-cost families than would be protected by a quarterly carry-over, even during the first quarter of the next year (see Table G-5). This is most striking with a \$3,000 threshold and the more lenient carry-over level of one-half of the threshold. Under those circumstances, an annual carry-over provision would extend protection to 42 percent of high-cost families, while a quarterly carry-over would protect only 33 percent during the first quarter. At higher thresholds, however, this difference would be smaller, and at a \$20,000 threshold, annual carry-overs would protect a slightly smaller proportion of high-cost families than would be protected in the first quarter by a quarterly carry-over (see Table G-5).

Second, annual carry-overs would extend protection for a longer time than would quarterly carry-overs. For this reason, annual carry-overs would offer more protection in aggregate than would quarterly carry-overs, even at high thresholds. For example, with a \$20,000 threshold and a carry-over set at three-fourths of the threshold, an annual carry-over would offer a full year of extra protection to 16 percent of high-cost families (see Table G-5). A quarterly carry-over would offer one quarter of extra protection to 18 percent (see Table G-5), but it would offer a half year's protection to only 6 percent, and a full year's protection to only 1 percent (see Table G-4).

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4. As noted earlier, the more stringent criterion would require quarterly expenses corresponding to annual expenses three-fourths as great as the threshold. Accordingly, for a \$10,000 threshold, the more stringent carry-over would require expenditures of \$1,875 per quarter (\$10,000 x 3/4 ÷ 4 quarters).

TABLE G-5. PERCENT OF HIGH-COST FAMILIES EXCEEDING ANNUAL AND QUARTERLY CARRY-OVER PROVISIONS, BY THRESHOLD AND CARRY-OVER LEVEL (Using 1982 dollars and percent exceeding quarterly carry-over in the first quarter)

| Carry-Over Level | Threshold $3,000 | $5,000 | $10,000 | $20,000 |
|---|---|---|---|---|
| 1/2 Annual Rate | | | | |
| Annual | 42 | 35 | 30 | 21 |
| Quarterly | 33 | 32 | 29 | 25 |
| 3/4 Annual Rate | | | | |
| Annual | 33 | 27 | 23 | 16 |
| Quarterly | 28 | 26 | 23 | 18 |

The greater protection that would be afforded to many families by annual carry-overs relative to quarterly carry-overs is likely to be a result of the uneven rate at which expenses accrue. Illnesses are often episodic, and, even when they are not, the rate at which services are used can fluctuate dramatically. Accordingly, a high-cost family that continues to include a seriously ill family member and that continues to generate high annual expenses may nonetheless have temporarily low expenes over one or two calendar quarters. Families following this pattern would exceed an annual carry-over but would fail at some point to exceed a quarterly carry-over, in some cases during the first calendar quarter of the subsequent year.[5]

5. An example from the data used here of the episodic nature of some medical expenses is provided by a family in which the mother was chronically ill with cancer. This family illustrates how a family that exceeds a $10,000 threshold in the baseline year can fail to exceed a quarterly carry-over while exceeding an annual carry-over. In the baseline year (1976), the family had expenses of $16,300, of which $15,400 was attributable to the mother, who had surgery three times during the year. In the first ten months of 1977, however, the mother's expenses were relatively trivial, amounting to about $300, and no one else in the family filed any claims. Accordingly, the family would not have exceeded even the more (Continued)

Not all high-cost families, however, would fare better under an annual than under a quarterly carry-over. For example, consider a high-cost family that has high expenses in the first quarter of the subsequent year, but few expenses thereafter. Assume that the threshold is $10,000 and the family's expenses were $8,000 during the first quarter of the next year and $1,000 during the remainder of the year. Under the more stringent annual carry-over, the family's $9,000 in expenses during the subsequent year would be subject to a $7,500 deductible,[6] and their expenses eligible for reimbursement would be $1,500. Under the corresponding quarterly carry-over, their $8,000 in expenses during the first quarter would be subject to a $1,875 deductible,[7] leaving $6,125 eligible for reimbursement.

## LONGER-TERM EXPENSES BELOW THE CATASTROPHIC THRESHOLD

A third group of high-cost families who are not classified as high-cost when only calendar-year expenses are considered are those who have longer-term expenses that are atypically high but fail to exceed the threshold in any one calendar year. One way to assess the extensiveness of such cases is to examine the effects of extending a calendar-year threshold to two calendar years. Under such an extended deductible, families could consider two full calendar years of expenses in meeting the threshold.

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5. (Continued) lenient quarterly carry-over. During the last two months of 1977, the mother again underwent surgery, generating an additional $5,200 in expenses. On the strength of her claims alone, the family would have exceeded the lower annual carry-over level ($10,000 x 1/2 = $5,000). In addition, the father had thyroid surgery in December, 1977. As a result, the family's expenses in 1977 totalled $9,369, sufficient to exceed even the more stringent carry-over ($10,000 x 3/4 = $7,500), but not sufficient to again exceed the $10,000 threshold.

6. $10,000 x 3/4 = $7,500.

7. $10,000 x 3/4 ÷ $1,875.

Extending a calendar-year threshold to two years (without doubling the required expenses) would increase the number of families classified as high-cost by 20 to 45 percent, depending on the threshold (see Table G-6). Nearly a third of this increase, however--from 6 to 12 percent--would be a result of lifting the calendar-year constraint in tabulating each year's expenses (discussed above). That is, extending a threshold to two years also would allow families whose expenses exceed the threshold during a 12-month period that does not coincide with a calendar year to qualify as high-cost. The remainder of the increase in high-cost families--from 14 to 34 percent--would represent the families whose costs are high but fail to exceed the threshold in any 12-month period during the two years.

TABLE G-6. FAMILIES EXCEEDING THRESHOLD WITH AND WITHOUT EXTENSION OF THRESHOLD TO TWO CALENDAR YEARS, BY THRESHOLD

| | $3,000 | $5,000 | $10,000 | $20,000 |
|---|---|---|---|---|
| Without Extension[a] (thousands) | 8,679 | 4,446 | 1,397 | 401 |
| With Extension (thousands) | 10,457 | 6,011 | 2,028 | 573 |
| Total percent increase | 20 | 35 | 45 | 43 |
| Percent increase from lifting calendar-year exclusion | 6 | 10 | 11 | 12 |
| Additional percent increase | 14 | 25 | 34 | 31 |

a. Over two-year period. Includes families exceeding threshold in either or both years.